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/DPM/ 09/15/2009

Docket No.: 05129-00118-US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Claude Dehennau et al.

Application No.: 10/564,877

Confirmation No.: 5169

Filed: 5/15/06

Art Unit: 1791

For: METHOD FOR ASSEMBLING ELEMENTS
OF A STRUCTURE COMPRISING A
HONEYCOMB CORE

Examiner: D. McNally

AMENDMENT AFTER FINAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madame:

In response to the Office Action dated June 18, 2009, please amend the above-identified application as follows:

In the Claims:

Claims 1-8 (Canceled)

9. (Currently amended) A method of assembling the elements of a structure based on a plastic transparent to laser radiation, comprising a cellular honeycomb core and two skins on either side of the core, perpendicular to the walls of the cells, wherein the skins are uniaxially or biaxially oriented, in which at least one of the skins and the core are assembled by welding using laser radiation, and at least one of the elements to be assembled comprises, in the vicinity of at least one part of its surface, a layer that at least partly absorbs the laser radiation, the welding taking place by the melting of this layer by means of the laser radiation in the weld zones without destroying the orientation, wherein the skins are provided on only one of their faces near their surface with a radiation – absorbent layer, the core being without a radiation-absorbent layer, and the core and the skins themselves being transparent to the radiation whereby the transparent cellular honeycomb core is sandwiched between the two skins.

10. (previously presented) The method according to claim 9, wherein the plastic is a PP or a PVC.

11. (previously presented) The method according to claim 9, wherein the elements to be welded by means of the laser radiation further include the cells of the core and wherein the latter is obtained by the thermoforming and folding of a plastic sheet, the laser-radiation-absorbent layer of which is located on either side of this sheet.

12. (previously presented) The method according to claim 9, wherein the core is obtained by a continuous manufacturing process and wherein the welding of the skins by means of the laser radiation takes place in line with this manufacturing process.

13. (currently amended) The method according to claim 12, wherein the continuous process for manufacturing the core is an extrusion process and wherein the laser-radiation-absorbent layer is located on only one face of each of the two skins.

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14. (previously presented) The method according to claim 12, wherein the continuous process for manufacturing the core is a process involving the thermoforming and folding of a sheet that includes, on either side, the laser-radiation-absorbent layer in order to form unwelded cells ; wherein the unwelded cells are assembled by welding using the laser radiation and wherein the two skins do not contain the radiation-absorbent layer.

15. (previously presented) The method according to claim 12, wherein the continuous process for manufacturing the core is a process involving the thermoforming and folding of a sheet in order to form unwelded cells ; wherein the cells remain unwelded but are optionally assembled by bonding using a solvent-free adhesive applied by coating the surface of the sheet in the zones to be bonded and wherein the laser-radiation-absorbent layer is located on only one face of each of the two skins.

16. (Canceled)

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REMARKS

This application has been carefully studied and amended in view of the Office Action dated June 18, 2009. Reconsideration of that Action is requested in view of the following.

Parent Claim 9 has been amended to more clearly define the invention. In that regard, Claim 9 now defines each of the skins as being provided on only one of its faces near its surface with a radiation-absorbent later. Moreover, Claim 9 has been amended to make clear that the core itself has no such absorbent layer. Claim 13 has been amended to delete the feature added to Claim 9 regarding the laser radiation absorbent layer being located on only one face of each of the two skins.

It is respectfully submitted that parent Claim 9 and its dependent claims are patentable over Rinkewich in view of Nettesheim, Dries, et al., and Lusignea . [Various dependent claims were rejected in further combination with Pflug or Ducruy.]

At the outset it is observed that the necessity to combine four different references in itself is an indication of the unobviousness of parent Claim 9.

In the rejection the Examiner stated that “applicant addresses Dries but does not clearly articulate any reason why Dries properly applied in the rejection”. Claim 9 has been amended to make clear why the hypothetical combination of references, including Dries, does not reasonably make obvious the invention of parent Claim 9.

Dries relates to biaxially oriented packaging films which are provided in both of the layers to be welded together, with an absorbent pigment so that a seal seam can be obtained by laser welding: see column 3, lines 29-32. This was required to melt uniformly the entire film (not only the layers provided with a pigment): see the next lines (33-46) of column 3; see also the examples where this feature is present and where complete melting is observed (see column 11, lines 37-40.)

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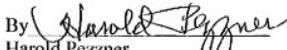
In the method of Claim 9, on the contrary, on a structure provided with a pigment only on one surface of the items to be welded (namely: the surface of the skins to be welded), the formation of asperities at the welding interface, so that kind of black hooks (extending from the pigmented layer of the skin) were mechanically anchored in the material of the honeycomb core, which is of a different composition (not comprising and absorbing pigment). Such a structure contributes to mechanically reinforce the weld so that very good adhesion is obtained without destruction of the orientation of the rest of the skin, even in the welded areas (which is not the case in Dries, where the films are completely melted so that orientation is lost in that area).

This is not at all suggested by Dries who states, on the contrary, as explained above, that better results are obtained if both layers to be welded contain the pigment so that the complete film can melt.

In fact, even when combining all of the four references used in rejecting Claim 9, one of ordinary skill in the art still has no teaching or even merely a hint to weld oriented skins with an absorbent layer on their surface, onto a core without absorbent layer.

For the reasons submitted above it is respectfully requested that the Examiner reconsider the rejection of Claim 9 and its dependent claims and that this application should be passed to issue.

Respectfully submitted,

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